

Math 190 Test 1
October 16, 2014

Name: _____

Note that both sides of each page may have printed material.

Instructions:

1. Read the instructions.
2. Panic!!! Kidding, don't panic! I repeat, do NOT panic!
3. Complete all problems. In this exam, each problem is worth 10 points.
4. Show ALL your work to receive full credit. You will get 0 credit for simply writing down the answers. Make sure your answers are fully simplified.
5. Write neatly so that I am able to follow your sequence of steps and box your answers.
6. Read through the exam and complete the problems that are easy (for you) first!
7. No scrap paper, calculators, notes or other outside aids allowed—including divine intervention, telepathy, knowledge osmosis, the smart kid that may be sitting beside you or that friend you might be thinking of texting. In fact, **cell phones should be out of sight!**
8. Use the correct notation and write what you mean! x^2 and $x2$ are not the same thing, for example, and I will grade accordingly.
9. Other than that, have fun and good luck!

Remember: math is fun, math is beautiful, this test is *not* hard, there is no spoon.

1. Simplify $(x^2y) \left(\frac{x^2y^{-3}z^{-6}}{y^5x^4z^{-8}} \right)^{-2}$ leaving only positive powers in your answer.

2. Long division (no credit given for any other method): $\frac{9x^3+5x}{2+3x}$

3. Simplify: $\frac{\frac{1}{x+3} - \frac{1}{2x-6}}{\frac{1}{x-3} + \frac{2}{x^2-9}}$

4. Divide and simplify: $\frac{2a^3 - a^2b - ab^2}{2a^2 + 5ab + 2b^2} \div \frac{2a^2 - 3ab + b^2}{a^2 + 2ab}$

5. Subtract and simplify: $\frac{4x+1}{x^2+5x+4} - \frac{x+3}{x^2+4x+3}$

6. Solve for x : $-5 = \frac{6}{x} - x$

7. The sum of three consecutive odd integers is 9 more than twice the smallest of the integers. Find all three integers.

8. The sum of the reciprocals of two consecutive even integers is $\frac{5}{12}$. Find the integers.

9. The current of a river is 3 mph. A boat travels 4 miles upstream and back again in 1 hour. What is the speed of the boat in still water?

10. A train travels 10 mph faster than a car. If the train covers a distance of 130 miles in the same time the car covers 110 miles, what is the speed of each of them?